

Europäisches Patentamt  
European Patent Office  
Office européen des brevets



(11) **EP 0 860 521 A3**

(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:  
26.05.1999 Bulletin 1999/21

(51) Int. Cl.<sup>6</sup>: **D01D 5/34**, D01D 5/24,  
D01D 5/253, D01F 8/12,  
D01F 8/06

(43) Date of publication A2:  
26.08.1998 Bulletin 1998/35

(21) Application number: **97122387.0**

(22) Date of filing: **18.12.1997**

(84) Designated Contracting States:  
**AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC  
NL PT SE**  
Designated Extension States:  
**AL LT LV MK RO SI**

(72) Inventors:  
• Kent, Diane R.  
Arden, North Carolina 28704 (US)  
• Hoyt, Matthew B.  
Arden, North Carolina 28704 (US)  
• Helms Jr., Charles F.  
Asheville, North Carolina 28804 (US)

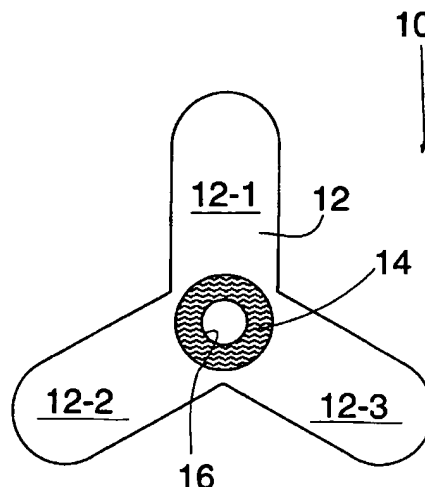
(30) Priority: **10.01.1997 US 34748 P**

(71) Applicant: **BASF CORPORATION**  
Mount Olive, New Jersey 07828-1234 (US)

(74) Representative:  
Stark, Vera, Dr. et al  
**BASF Aktiengesellschaft**  
Patente, Marken und Lizenzen  
67056 Ludwigshafen (DE)

(54) **Hollow bicomponent filaments and methods of making same**

(57) Novel bicomponent fibers have a sheath domain and an core domain which is embedded entirely within, and thereby completely surrounded by, the polyamide domain. The core domain is annular and defines a longitudinally extending central void. The preferred bicomponent fibers have a sheath-core structure wherein the polyamide domain constitutes the sheath and a fiber-forming polyolefin polymer constitutes the core. The preferred trilobal bicomponent fibers will exhibit a modification ratio of between 2 to 4, an arm angle of between 7° to about 35°, and a total cross-sectional void area between about 3 and about 10 percent. Each lobe of the fiber may optionally contain a lobal void space which, if present, is preferably radially elongate in cross section.



**EP 0 860 521 A3**



European Patent  
Office

## EUROPEAN SEARCH REPORT

Application Number  
EP 97 12 2387

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
A	EP 0 705 923 A (HERCULES) 10 April 1996 * page 4, line 22 - line 49; claims * ---	1	D01D5/34 D01D5/24 D01D5/253 D01F8/12 D01F8/06
X	WO 92 02669 A (DOW CHEMICAL) 20 February 1992 * page 5, line 18 - page 16, line 2; claims * -----	1-8	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			D01D D01F D06N
The present search report has been drawn up for all claims			
Place of search <b>THE HAGUE</b>		Date of completion of the search <b>21 March 1999</b>	Examiner <b>Hellemans, W</b>
<p><b>CATEGORY OF CITED DOCUMENTS</b></p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... &amp; : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.

EP 97 12 2387

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

21-03-1999

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
EP 705923	A	10-04-1996	US	5556589 A	17-09-1996
WO 9202669	A	20-02-1992	AU	645264 B	13-01-1994
			DE	69032885 D	18-02-1999
			EP	0496734 A	05-08-1992
			JP	5500394 T	28-01-1993